facility vapor connection, must be fitted with a means to prevent backflow of vapor to the vessel's vapor collection system during loading.

(i) Electrical bonding between vessel and shore must be in accordance with 46 CFR 35.35–.5.

§ 154.2102 Facility requirements for vessel liquid overfill protection.

This section does not apply to facilities collecting vapors emitted from vessel cargo tanks while inerting, padding, or purging the cargo tanks with an inert gas and not loading cargo into the cargo tank.

(a) Each facility that receives cargo vapor from a tank barge that is fitted with overfill protection, in accordance with 46 CFR 39.2009(a)(1)(iii), must provide a 120-volt, 20-amp explosion-proof receptacle for the overfill protection system that meets—

(1) ANSI NEMA WD–6 (incorporated by reference, see 33 CFR 154.106);

(2) NFPA 70 (2011), Articles 406.9 and 501.145 (incorporated by reference, see 33 CFR 154.106); and

(3) 46 CFR 111.105–9.

(b) Each facility that receives cargo vapor from a tank barge that is fitted with an intrinsically safe cargo tank level sensor system complying with 46 CFR 39.2009(a)(2), as a means of overfill protection, must have an overfill control system on the dock capable of powering and receiving an alarm and shutdown signal from the cargo tank level sensor system that—

(1) Closes the remotely operated cargo vapor shutoff valve required by 33 CFR 154.2101(a) and activates the emergency shutdown system required by 33 CFR 154.550 when—

(i) A tank overfill signal is received from the barge; or

(ii) Electrical continuity of the cargo tank level sensor system is interrupted;

(2) Activates an audible and visible alarm that warns barge and facility personnel when a tank overfill signal, or an optional high-level signal corresponding to a liquid level lower than the tank overfill sensor setting, is received from the barge;

(3) Has a mechanism to test the alarms and automatic shutdown systems electrically and mechanically be-

fore operating the vapor control system (VCS);

(4) Has suitable means, such as approved intrinsic safety barriers able to accept passive devices, so that the overfill and optional alarm circuits on the barge side of the overfill control system, including cabling, normally closed switches, and pin and sleeve connectors, are intrinsically safe;

(5) Is labeled at the dock with the maximum allowable inductance (in millihenrys) and capacitance (in microfarads) to be connected to the facility overfill protection system as specified by the equipment manufacturer; and

(6) Has a female connecting plug for the tank barge level sensor system with a five-wire, 16-ampere connector body meeting IEC 60309–1 and IEC 60309–2 (both incorporated by reference, see 33 CFR 154.106), that is—

(i) Configured with pins S2 (N) and R1 (L3) for the tank overfill sensor circuit, pin G connected to the cabling shield, and pins N (L2) and T3 (L1) reserved for an optional high-level alarm connection;

(ii) Labeled ''Connector for Barge Overfill Control System''; and

(iii) Connected to the overfill control system by a shielded flexible cable.

§ 154.2103 Facility requirements for vessel vapor overpressure and vacuum protection.

In this section, the requirements of having a flame arrester or a flame screen at the opening of a pressure relief valve or a vacuum relief valve apply only to facilities collecting vapors of flammable, combustible, or non-high flash point liquid cargoes.

(a) A facility's vapor control system (VCS) must have the capacity for collecting cargo vapor at a rate of not less than the facility's maximum liquid transfer rate for cargoes that are vapor controlled plus the vapor growth for the cargoes and any inerting, diluting, or enriching gas that may be added to the system. Vapor growth must be considered as 25 percent of the cargo's saturated vapor pressure in pounds per square inch absolute (psia) at 115 °F, divided by 12.5 psia (the vapor pressure of gasoline at 115 °F), times the facility's maximum liquid transfer rate, unless there is experimental data for